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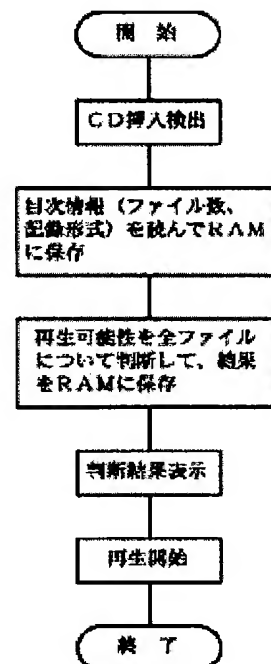
(72)Inventor : SHIRAISHI TETSUYA

(54) INFORMATION REPRODUCING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an information reproducing device where a user can learn in a short time whether the information for reproduction being recorded on a recording medium is reproducible and whether the recording format is the cause in the case the reproduction is impossible.

SOLUTION: The index information including the recording format information of the information for reproduction recorded on the recording medium is read out with a read-out means from the recording medium, and such a subject whether the recording format of the information for reproduction is a format reproducible with this information reproducing device is judged by a judging means from the recording form information, and the result is reported by a reporting means.



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CLAIMS

[Claim(s)]

[Claim 1]In an information reproducing device for reproducing information for reproduction currently recorded on a recording medium, A reading means which reads contents information including recording format information of said information for reproduction from said recording medium, An information reproducing device in which a recording form of said information for reproduction possesses a decision means which judges whether it is a refreshable recording form from said recording format information, and an informing means which reports a result of said judgment with said information reproducing device.

[Claim 2]The information reproducing device according to claim 1 with which said decision means makes said judgment about each of two or more of said files in said single recording medium with which two or more files including said information for reproduction are recorded.

[Claim 3]The information reproducing device possessing a detection means to detect insertion of said recording medium to said information reproducing device, and a control means which makes said judgment make on said decision means based on said detection according to claim 1.

[Claim 4]The information reproducing device according to claim 1 with which said decision means makes an extension in said contents information said recording format information.

[Claim 5]The information reproducing device according to claim 1 which said informing means reports by the display of a picture that said result is.

[Claim 6]The information reproducing device according to claim 1 which said informing means reports with an audio output that said result is.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the information reproducing device for reproducing the information for reproduction currently recorded on the recording medium.

[0002]

[Description of the Prior Art]For example, the sound information which only sound information is recorded on CD (compact disk) of the time of development as information for playback, but is recorded on such CD was refreshable with the CD reproduction device. However, with CD-ROM playback equipment, although the information for playback currently recorded on CD-ROM developed after that is refreshable, it is unreplicable with the usual CD reproduction device. And in conventional playback equipment, it was not understood whether playback of the information for playback currently recorded on the CD would be possible until it made it regenerate.

[0003]In recent years, various kinds of sound compression technology including MP3 (MPEG-1 Audio Layer 3) is flooding. And when recording sound information on CD-R or CD-RW by computer, the sound file of other forms can also make the disk of one sheet intermingled, and the sound file of MP3 form can also record the sound file of an incompressible WAVE form.

[0004]There is two or more compression technology of the MPEG-2 grade adopted as MPEG-1 adopted as the video CD or DVD (digital versatile disc) video not only about sound but about the picture. And as well as the case where the above sound information is recorded when recording picture information on a recording medium by computer, several recording form different files can be recorded on a single recording medium.

[0005]

[Problem(s) to be Solved by the Invention]However, if there is no telling whether reproduction of the information for reproduction currently recorded on the recording medium is possible, like the conventional information reproducing device until it makes it regenerate, the inconvenience that it cannot reproduce when it is going to reproduce the information for reproduction arises. Mistaking, if fault has arisen in the information reproducing device or the recording medium for some users is also considered. If the information for reproduction is compressed especially, about 100 thing for which the recording form of all the files is memorized since the information for reproduction is dramatically recordable as many files is difficult for a single recording medium.

[0006]A possibility that the software for reproducing the recording form information for reproduction is also installed in the computer body which recorded the information for reproduction on the recording medium is high. However, a portable information reproducing device, an information reproducing device for mount, etc. which are used by a place where one has gone do not necessarily support the recording form. If an information reproducing device is a computer, the software for reproducing the recording form information for reproduction that this computer is not supported can also be later added by download etc. However, the refreshable recording form is being fixed in comparatively cheap information reproducing devices, such as a portable information reproducing device and an information reproducing device for mount.

[0007]For this reason, when it is going to reproduce by a place where one has gone, the inconvenience that it turns out that it cannot begin and reproduce can be considered. For example, if only two of the 100 music could be played and only the about two music was listened to by the place where one has gone even if the music of 100 music was recorded on CD, the utility value of the CD is low. Therefore, it aims at providing the information reproducing device which can know that the cause is a recording form when whether reproduction of the information for reproduction currently recorded on the recording medium being possible for this invention and reproduction are impossible in a short time.

[0008]

[Means for Solving the Problem]In an information reproducing device concerning Claim 1, a decision means judges whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device, and an informing means reports that result. For this reason, when whether reproduction of that information for reproduction being possible and reproduction are impossible, it can know that that cause is a recording form.

[0009]And a decision means judges whether a recording form of information for reproduction is a refreshable recording form by this information reproducing device from recording format information in contents information. For this reason, judging from the information for reproduction itself, when whether reproduction of that information for reproduction being possible and reproduction are [rather than] impossible, it can know that that cause is a recording form in a short time.

[0010]In an information reproducing device concerning Claim 2, a decision means judges whether those recording forms are refreshable recording forms by this information reproducing device about each of two or more files which can be set to a single recording medium with which two or more files including information for reproduction are recorded. For this reason, when whether reproduction of information for reproduction in each file being possible when two or more recording form various files' are recorded on a single recording medium, and reproduction are impossible, it can especially know that that cause is a recording form in a short time.

[0011]In an information reproducing device concerning Claim 3, if a detection means detects that a recording medium was inserted in an information reproducing device, Since a control means makes a decision means judge whether a recording form of information for reproduction currently recorded on this recording medium is a refreshable recording form by this information reproducing device, an informing means also reports that result. For this reason, only by inserting a recording medium in an information reproducing device, when whether reproduction of information for reproduction currently recorded on this recording medium being possible and reproduction are impossible, it can know automatically that that cause is a recording form.

[0012]In an information reproducing device concerning Claim 4, when a decision means judges whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device from recording format information in contents information, a decision means makes an extension in contents information recording format information, and is judged. For this reason, when whether judgment being easy and reproduction of that information for reproduction being possible and reproduction are impossible, it can know further that that cause is a recording form in a short time.

[0013]In an information reproducing device concerning Claim 5, an informing means reports a result of judgment whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device by the display of a picture. For this reason, when whether reproduction of that information for reproduction being possible and reproduction are impossible, it can check easily that that cause is a recording form.

[0014]In an information reproducing device concerning Claim 6, an informing means reports a result of judgment whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device with an audio output. For this reason, when whether reproduction of that information for reproduction being possible even when an information reproducing device's cannot be viewed,

and reproduction are impossible, it can know that that cause is a recording form.

[0015]

[Embodiment of the Invention] Hereafter, one embodiment of this invention applied to the sound system for CD is described, referring to drawing 1 - 3. Drawing 3 shows the principal part of the sound system of this embodiment. This sound system 11 is equipped with CD decks 12, the acoustic circuit 13, the central processing unit 14, the final controlling element 15, and the indicator 16 grade. The solid line with the arrow between CD decks 12 and the acoustic circuit 13 shows the audible signal, and the solid line without the arrow between other component part shows the control signal.

[0016] CD decks 12 have the drive mechanism of CD, a read-out control circuit, a decoder circuit of CD, a decoder circuit of CD-ROM, a digital disposal circuit that carries out sound extension of the signal decoded from CD-ROM further, and is made into an audible signal, a D/A converter which changes a digital signal into an analog signal at the time of playback, etc. The acoustic circuit 13 is a circuit which outputs the audible signal inputted from CD decks 12 to a power amplifier, a loudspeaker, etc., and has a preamplifier. This sound system 11 is equipped with the radio set, the tape cassette deck, etc. as a sound source in addition to CD-decks 12, and the sound-source selector which chooses these sound sources has the acoustic circuit 13.

[0017] If this sound system 11 is a cheap portable sound system, a sound system for mount, etc., the one-chip microcomputer built in to RAM or ROM is used as the central processing unit 14 in many cases. The final controlling element 15 is equipped with the button for performing operation of powering on or others, etc. The indicator 16 performs that CD decks 12 are working and other displays. This sound system 11 is a sound system for mount, and when this car is equipped also with the car navigation device or the television set, the indicator 16 is used also [indicators /, such as these car navigation devices,].

[0018] Drawing 1 shows processing when CD is inserted in CD decks 12. Namely, if a power supply is supplied to CD decks 12 by operation of the final controlling element 15, CD is inserted in CD decks 12 and CD decks 12 detect this insertion by it. The central processing unit 14 makes the table-of-contents (TOC, Table Of Contents) information on CD read to CD decks 12 automatically based on this detection. Since it is also considered that various forms exist in the contents information of CD itself, when reading this contents information, it reads supposing a certain form.

[0019] The file (track = music) number currently recorded on CD, the recording format information of each file, etc. are included in the contents information of CD, and this contents information is saved at RAM in the central processing unit 14. And the central processing unit 14 investigates the recording format information in the contents information saved at RAM. With this sound system 11, each recording form from the first file to the last file judges whether it is a refreshable recording form, and also saves that decision result at RAM in the central processing unit 14.

[0020] If a file is created by computer, the extension which shows the recording form of the file will be automatically attached to the end of a file name in many cases. For example, in MP3 form, the extension ".mp3" is attached and the extension ".wav" is attached in WAVE form. Therefore, judgment is easy, judging from an extension and it can be judged whether the recording form of each file currently recorded on CD is a refreshable recording form by this sound system 11 in a short time. However, as long as recording format information other than an extension is included in contents information, it may judge from the recording format information.

[0021] Then, the central processing unit 14 investigates the decision result saved at RAM, and displays a decision result on the indicator 16. Drawing 2 shows the display style by various kinds of indicators 16. It indicates that 13 music of drawing 2 (a) of 25 music which the sound system 11 is portable, is when the indicator 16 is small, for example, and is recorded on CD is refreshable. It is expressed as the existence of the round mark whether drawing 2 (b) is renewable for every [other than 13 music of 25 music which the sound system 11 is an object for mount, is when the indicator 16 is to some extent large, for example, and is recorded on CD being refreshable] tune number.

[0022] The indicator 16 is used also [indicators /, such as a car navigation device,], and drawing

2(c) is when quite large, for example, although the sound system 11 is an object for mount. In this case, corresponding to the tune number, it indicates whether reproduction is a recording form and refreshable [a track name], or impossible. This drawing 2(c) is a case where the music of AT3 form and the music of LQT form are unreproducible, although the sound system 11 can reproduce the music of WAVE form, and the music of MP3 form.

[0023]Although the decision result about all the music is displayed in drawing 2(c), only refreshable music may be displayed, only refreshable music may be packed and displayed in that case, unreproducible music may be made blank, and it may indicate by classification by color with refreshable music and unreproducible music. The display style of these various kinds is changed by operation of the final controlling element 15. In drawing 2, although 25 music is to be recorded on CD, CD in which only one music is recorded is processed similarly.

[0024]By such display in the indicator 16, when whether a user's having music unreproducible in CD and playback are impossible, it can know that the cause is a recording form. After such a display carries out predetermined time continuation by the indicator 16, playback of the refreshable music in CD is started and a music number, performance time, etc. are displayed on the indicator 16. If it gets to know that there is music unreproducible in CD as mentioned above before going out, the form of unreproducible music is convertible for a refreshable form by computer, or unreproducible music can be deleted, refreshable music can newly be written in, and it can be made high CD of utility value by a place where one has gone.

[0025]In the above sound system 11, if CD is inserted in CD decks 12, It is judged automatically whether the form of the music currently recorded on this CD is a refreshable recording form by this sound system 11, and after this decision result is displayed on the indicator 16, playback is started automatically. However, as long as there is no predetermined operation by the final controlling element 15, reproduction may be started promptly, without making an above-mentioned judgment, or reproduction may be started, only when it stops by the displaying condition of a decision result and there is predetermined operation by the final controlling element 15 after that.

[0026]Although the decision result of whether the recording form of the music currently recorded on CD is a refreshable recording form by this sound system 11 is displayed on the indicator 16 in the above sound system 11, this decision result may be reported by the output of synthesized speech, etc. Although CD is used as a recording medium in the above sound system 11, As long as it is the recording medium with which the information for playback is recorded by digital format, semiconductor memory, such as CD-R, CD-RW, and a memory card, the hard disk which can be removed, magnetic tape, etc. may be used as a recording medium.

[0027]Although an above embodiment applies this invention to the sound system 11, this invention can be applied to a picture reproducer etc., therefore DVD etc. may be used as a recording medium.

[0028]

[Effect of the Invention]In the information reproducing device concerning Claim 1, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can know that the cause is a recording form in a short time. For this reason, it can prevent being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium by knowing these things beforehand about the recording medium with which reproduction is presented.

[0029]When two or more recording form various files are recorded on the single recording medium in the information reproducing device concerning Claim 2, When whether reproduction of the information for reproduction in each file being possible and reproduction are impossible, it can especially know that the cause is a recording form in a short time. For this reason, it can prevent effectively being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0030]In the information reproducing device concerning Claim 3, only by inserting a recording medium in an information reproducing device, when whether reproduction of the information for

reproduction currently recorded on this recording medium being possible and reproduction are impossible, it can know automatically that that cause is a recording form. For this reason, it can prevent without omission [mistake / when it is going to reproduce the information for reproduction, cannot reproduce, or / if fault has arisen in the information reproducing device or the recording medium].

[0031]In the information reproducing device concerning Claim 4, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can know further that the cause is a recording form in a short time. For this reason, it can prevent simply being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0032]In the information reproducing device concerning Claim 5, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can check easily that the cause is a recording form. For this reason, it can prevent easily being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0033]In the information reproducing device concerning Claim 6, even when an information reproducing device cannot be viewed, Since it can know that the cause is a recording form when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, these things can be known also by the case where the car is being driven.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]This invention relates to the information reproducing device for reproducing the information for reproduction currently recorded on the recording medium.

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PRIOR ART

[Description of the Prior Art]For example, the sound information which only sound information is recorded on CD (compact disk) of the time of development as information for playback, but is recorded on such CD was refreshable with the CD reproduction device. However, with CD-ROM playback equipment, although the information for playback currently recorded on CD-ROM developed after that is refreshable, it is unreproducible with the usual CD reproduction device. And in conventional playback equipment, it was not understood whether playback of the information for playback currently recorded on the CD would be possible until it made it regenerate.

[0003]In recent years, various kinds of sound compression technology including MP3 (MPEG-1 Audio Layer 3) is flooding. And when recording sound information on CD-R or CD-RW by computer, the sound file of other forms can also make the disk of one sheet intermingled, and the sound file of MP3 form can also record the sound file of an incompressible WAVE form.

[0004]There is two or more compression technology of the MPEG-2 grade adopted as MPEG-1 adopted as the video CD or DVD (digital versatile disc) video not only about sound but about the picture. And as well as the case where the above sound information is recorded when recording picture information on a recording medium by computer, several recording form different files can be recorded on a single recording medium.

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EFFECT OF THE INVENTION

[Effect of the Invention]In the information reproducing device concerning Claim 1, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can know that the cause is a recording form in a short time. For this reason, it can prevent being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium by knowing these things beforehand about the recording medium with which reproduction is presented.

[0029]When two or more recording form various files are recorded on the single recording medium in the information reproducing device concerning Claim 2, When whether reproduction of the information for reproduction in each file being possible and reproduction are impossible, it can especially know that the cause is a recording form in a short time. For this reason, it can prevent effectively being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0030]In the information reproducing device concerning Claim 3, only by inserting a recording medium in an information reproducing device, when whether reproduction of the information for reproduction currently recorded on this recording medium being possible and reproduction are impossible, it can know automatically that that cause is a recording form. For this reason, it can prevent without omission [mistake / when it is going to reproduce the information for reproduction, cannot reproduce, or / if fault has arisen in the information reproducing device or the recording medium].

[0031]In the information reproducing device concerning Claim 4, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can know further that the cause is a recording form in a short time. For this reason, it can prevent simply being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0032]In the information reproducing device concerning Claim 5, when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, it can check easily that the cause is a recording form. For this reason, it can prevent easily being unable to reproduce, when it is going to reproduce the information for reproduction, or mistaking, if fault has arisen in the information reproducing device or the recording medium.

[0033]In the information reproducing device concerning Claim 6, even when an information reproducing device cannot be viewed, Since it can know that the cause is a recording form when whether reproduction of the information for reproduction currently recorded on the recording medium being possible and reproduction are impossible, these things can be known also by the case where the car is being driven.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]However, if there is no telling whether reproduction of the information for reproduction currently recorded on the recording medium is possible, like the conventional information reproducing device until it makes it regenerate, the inconvenience that it cannot reproduce when it is going to reproduce the information for reproduction arises.

Mistaking, if fault has arisen in the information reproducing device or the recording medium for some users is also considered. If the information for reproduction is compressed especially, about 100 thing for which the recording form of all the files is memorized since the information for reproduction is dramatically recordable as many files is difficult for a single recording medium.

[0006]A possibility that the software for reproducing the recording form information for reproduction is also installed in the computer body which recorded the information for reproduction on the recording medium is high. However, a portable information reproducing device, an information reproducing device for mount, etc. which are used by a place where one has gone do not necessarily support the recording form. If an information reproducing device is a computer, the software for reproducing the recording form information for reproduction that this computer is not supported can also be later added by download etc. However, the refreshable recording form is being fixed in comparatively cheap information reproducing devices, such as a portable information reproducing device and an information reproducing device for mount.

[0007]For this reason, when it is going to reproduce by a place where one has gone, the inconvenience that it turns out that it cannot begin and reproduce can be considered. For example, if only two of the 100 music could be played and only the about two music was listened to by the place where one has gone even if the music of 100 music was recorded on CD, the utility value of the CD is low. Therefore, it aims at providing the information reproducing device which can know that the cause is a recording form when whether reproduction of the information for reproduction currently recorded on the recording medium being possible for this invention and reproduction are impossible in a short time.

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MEANS

[Means for Solving the Problem]In an information reproducing device concerning Claim 1, a decision means judges whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device, and an informing means reports that result. For this reason, when whether reproduction of that information for reproduction being possible and reproduction are impossible, it can know that that cause is a recording form.

[0009]And a decision means judges whether a recording form of information for reproduction is a refreshable recording form by this information reproducing device from recording format information in contents information. For this reason, judging from the information for reproduction itself, when whether reproduction of that information for reproduction being possible and reproduction are [rather than] impossible, it can know that that cause is a recording form in a short time.

[0010]In an information reproducing device concerning Claim 2, a decision means judges whether those recording forms are refreshable recording forms by this information reproducing device about each of two or more files which can be set to a single recording medium with which two or more files including information for reproduction are recorded. For this reason, when whether reproduction of information for reproduction in each file being possible when two or more recording form various files' are recorded on a single recording medium, and reproduction are impossible, it can especially know that that cause is a recording form in a short time.

[0011]In an information reproducing device concerning Claim 3, if a detection means detects that a recording medium was inserted in an information reproducing device, Since a control means makes a decision means judge whether a recording form of information for reproduction currently recorded on this recording medium is a refreshable recording form by this information reproducing device, an informing means also reports that result. For this reason, only by inserting a recording medium in an information reproducing device, when whether reproduction of information for reproduction currently recorded on this recording medium being possible and reproduction are impossible, it can know automatically that that cause is a recording form.

[0012]In an information reproducing device concerning Claim 4, when a decision means judges whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device from recording format information in contents information, a decision means makes an extension in contents information recording format information, and is judged. For this reason, when whether judgment being easy and reproduction of that information for reproduction being possible and reproduction are impossible, it can know further that that cause is a recording form in a short time.

[0013]In an information reproducing device concerning Claim 5, an informing means reports a result of judgment whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device by the display of a picture. For this reason, when whether reproduction of that information for reproduction being possible and reproduction are impossible, it can check easily that that cause is a recording form.

[0014]In an information reproducing device concerning Claim 6, an informing means reports a

result of judgment whether a recording form of information for reproduction currently recorded on a recording medium is a refreshable recording form by this information reproducing device with an audio output. For this reason, when whether reproduction of that information for reproduction being possible even when an information reproducing device's cannot be viewed, and reproduction are impossible, it can know that that cause is a recording form.

[0015]

[Embodiment of the Invention] Hereafter, one embodiment of this invention applied to the sound system for CD is described, referring to drawing 1 - 3. Drawing 3 shows the principal part of the sound system of this embodiment. This sound system 11 is equipped with CD decks 12, the acoustic circuit 13, the central processing unit 14, the final controlling element 15, and the indicator 16 grade. The solid line with the arrow between CD decks 12 and the acoustic circuit 13 shows the audible signal, and the solid line without the arrow between other component part shows the control signal.

[0016] CD decks 12 have the drive mechanism of CD, a read-out control circuit, a decoder circuit of CD, a decoder circuit of CD-ROM, a digital disposal circuit that carries out sound extension of the signal decoded from CD-ROM further, and is made into an audible signal, a D/A converter which changes a digital signal into an analog signal at the time of playback, etc. The acoustic circuit 13 is a circuit which outputs the audible signal inputted from CD decks 12 to a power amplifier, a loudspeaker, etc., and has a preamplifier. This sound system 11 is equipped with the radio set, the tape cassette deck, etc. as a sound source in addition to CD-decks 12, and the sound-source selector which chooses these sound sources has the acoustic circuit 13.

[0017] If this sound system 11 is a cheap portable sound system, a sound system for mount, etc., the one-chip microcomputer built in to RAM or ROM is used as the central processing unit 14 in many cases. The final controlling element 15 is equipped with the button for performing operation of powering on or others, etc. The indicator 16 performs that CD decks 12 are working and other displays, This sound system 11 is a sound system for mount, and when this car is equipped also with the car navigation device or the television set, the indicator 16 is used also [indicators /, such as these car navigation devices,].

[0018] Drawing 1 shows processing when CD is inserted in CD decks 12. Namely, if a power supply is supplied to CD decks 12 by operation of the final controlling element 15, CD is inserted in CD decks 12 and CD decks 12 detect this insertion by it, The central processing unit 14 makes the table-of-contents (TOC, Table Of Contents) information on CD read to CD decks 12 automatically based on this detection. Since it is also considered that various forms exist in the contents information of CD itself, when reading this contents information, it reads supposing a certain form.

[0019] The file (track = music) number currently recorded on CD, the recording format information of each file, etc. are included in the contents information of CD, and this contents information is saved at RAM in the central processing unit 14. And the central processing unit 14 investigates the recording format information in the contents information saved at RAM, With this sound system 11, each recording form from the first file to the last file judges whether it is a refreshable recording form, and also saves that decision result at RAM in the central processing unit 14.

[0020] If a file is created by computer, the extension which shows the recording form of the file will be automatically attached to the end of a file name in many cases. For example, in MP3 form, the extension ".mp3" is attached and the extension ".wav" is attached in WAVE form. Therefore, judgment is easy, judging from an extension and it can be judged whether the recording form of each file currently recorded on CD is a refreshable recording form by this sound system 11 in a short time. However, as long as recording format information other than an extension is included in contents information, it may judge from the recording format information.

[0021] Then, the central processing unit 14 investigates the decision result saved at RAM, and displays a decision result on the indicator 16. Drawing 2 shows the display style by various kinds of indicators 16. It indicates that 13 music of drawing 2 (a) of 25 music which the sound system 11 is portable, is when the indicator 16 is small, for example, and is recorded on CD is refreshable. It is expressed as the existence of the round mark whether drawing 2 (b) is

renewable for every [other than 13 music of 25 music which the sound system 11 is an object for mount, is when the indicator 16 is to some extent large, for example, and is recorded on CD being refreshable] tune number.

[0022]The indicator 16 is used also [indicators /, such as a car navigation device,], and drawing 2 (c) is when quite large, for example, although the sound system 11 is an object for mount. In this case, corresponding to the tune number, it indicates whether reproduction is a recording form and refreshable [a track name], or impossible. This drawing 2 (c) is a case where the music of AT3 form and the music of LQT form are unreproducible, although the sound system 11 can reproduce the music of WAVE form, and the music of MP3 form.

[0023]Although the decision result about all the music is displayed in drawing 2 (c), only refreshable music may be displayed, only refreshable music may be packed and displayed in that case, unreproducible music may be made blank, and it may indicate by classification by color with refreshable music and unreproducible music. The display style of these various kinds is changed by operation of the final controlling element 15. In drawing 2, although 25 music is to be recorded on CD, CD in which only one music is recorded is processed similarly.

[0024]By such display in the indicator 16, when whether a user's having music unreproducible in CD and playback are impossible, it can know that the cause is a recording form. After such a display carries out predetermined time continuation by the indicator 16, playback of the refreshable music in CD is started and a music number, performance time, etc. are displayed on the indicator 16. If it gets to know that there is music unreproducible in CD as mentioned above before going out, the form of unreproducible music is convertible for a refreshable form by computer, or unreproducible music can be deleted, refreshable music can newly be written in, and it can be made high CD of utility value by a place where one has gone.

[0025]In the above sound system 11, if CD is inserted in CD decks 12, It is judged automatically whether the form of the music currently recorded on this CD is a refreshable recording form by this sound system 11, and after this decision result is displayed on the indicator 16, playback is started automatically. However, as long as there is no predetermined operation by the final controlling element 15, reproduction may be started promptly, without making an above-mentioned judgment, or reproduction may be started, only when it stops by the displaying condition of a decision result and there is predetermined operation by the final controlling element 15 after that.

[0026]Although the decision result of whether the recording form of the music currently recorded on CD is a refreshable recording form by this sound system 11 is displayed on the indicator 16 in the above sound system 11, this decision result may be reported by the output of synthesized speech, etc. Although CD is used as a recording medium in the above sound system 11, As long as it is the recording medium with which the information for playback is recorded by digital format, semiconductor memory, such as CD-R, CD-RW, and a memory card, the hard disk which can be removed, magnetic tape, etc. may be used as a recording medium.

[0027]Although an above embodiment applies this invention to the sound system 11, this invention can be applied to a picture reproducer etc., therefore DVD etc. may be used as a recording medium.

[Translation done.]

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3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a flow chart of one embodiment of this invention.

[Drawing 2]It is a front view of various kinds of indicators in one embodiment.

[Drawing 3]It is a block diagram of the principal part of one embodiment.

[Description of Notations]

11 -- a sound system (information reproducing device) and 12 -- CD decks (a reading means, detection means) and 14 -- a central processing unit (a decision means, control means) and 16 -- indicator (informing means)

[Translation done.]

* NOTICES *

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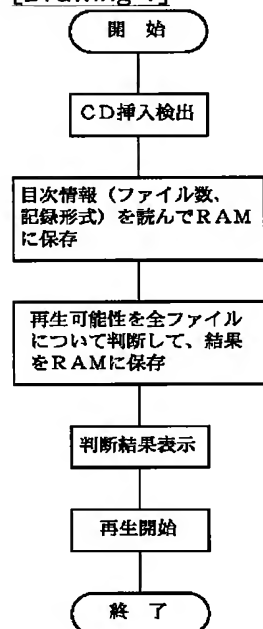
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DRAWINGS

[Drawing 1]



[Drawing 2]

(a) 13/25 OK ←16

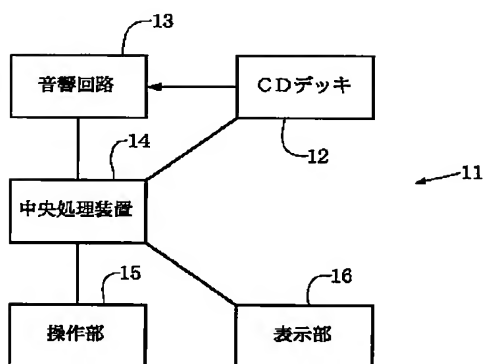
(b) ①2③④5⑥78⑨10→
25キョウウ13キョウ サイデキス ←16

←16

1Track	Honey	.WAVE	再生可能
2Track	Butterfly	.AT3	再生不可
3Track	My ALL	.MP3	再生可能
4Track	The Roof	.MP3	再生可能
5Track	Fourth Of July	.LQT	再生不可
6Track	Break Down	.MP3	再生可能
7Track	Babydoll	.AT3	再生不可
8Track	Close My Eyes	.AT3	再生不可
9Track	Whenever You Call	.MP3	再生可能
10Track	Fly Away	.LQT	再生不可

(c) ↓ ↓ ↓ ↓

[Drawing 3]



[Translation done.]